KERN & Sohn GmbH
Ziegelei 1
D-72336 Balingen
E-Mail: info@kern-sohn.com
Tel: +49-[0]7433- 9933-0
Fax: +49-[0]7433-9933-149
Internet: www.kern-sohn.com

Operating instruction
Platform scale

KERN ITT, KMT-TM

Version 2.1
11/2007
GB



ITT-BA-e-0721
ME-Nr.: 22017083

Table of contents

1 Introduction

1.1 Safety instructions



CAUTION!

Do not use the scales in hazardous areas!

Our product range includes special devices for hazardous areas.



DANGER!

Electric shock hazard!

▲ Always pull out the mains plug before any work on the device.



DANGER!

Electric shock hazard if the mains cable is damaged!

▲ Check the mains cable for damage regularly and replace it immediately if it is damaged.

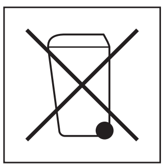
▲ On the rear side of the device, maintain a clearance of at least 3 cm in order to prevent the mains cable bending too much.



CAUTION!

On no account open the device!

The warranty is void if this stipulation is ignored. The device may only be opened by authorized persons.



Disposal

➜ Observe the valid environmental regulations when disposing of the scale.

If the device has a rechargeable battery:

The battery contains heavy metals and therefore must not be disposed of with normal waste.

➜ Observe the local regulations for disposing of environmentally hazardous materials.

Note **Use with foodstuffs**

Parts coming into contact with foodstuffs have smooth surfaces and are easy to clean. The materials used do not splinter and are free of harmful substances.

With foodstuffs, it is recommended to use the supplied protective cover.

➜ Clean the protective cover regularly and carefully.

➜ Replace damaged or very dirty protective cover immediately.

1.2 Description

1.2.1 Overview

1 Display

2 Specifications, rating plate

3 Numerical keys

4 Function keys

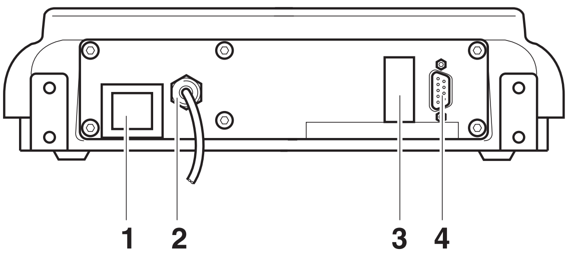


1 Power supply connection

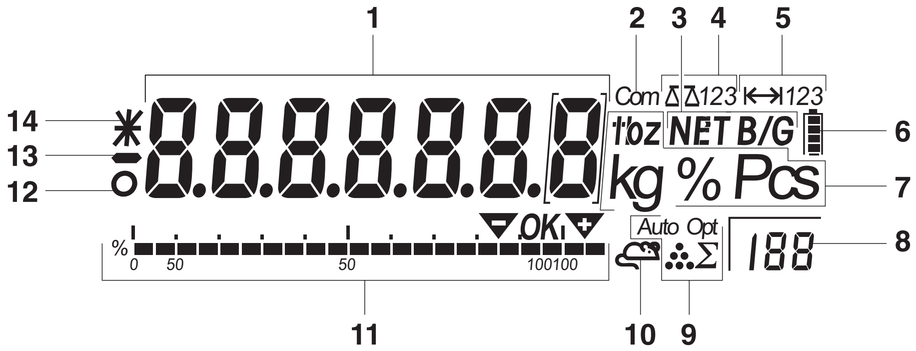
2 Weighing platform connection

3 Optional interface

4 RS232 interface



1.2.2 Display



1 7-segment display, 7 digits, with decimal point

2 Active interface

3 Symbol for displaying gross and net values

4 Active scale

5 Weighing range display

6 Battery charge level; only present on scales with a battery

7 Weight units

8 Selected reference quantity

9 Symbols for optimizing the average piece weight and accumulating

10 Symbol for dynamic weighing

11 Graphic display of the weighing range, display for checkweighing

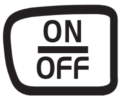
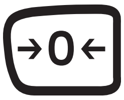
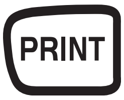
12 Stability monitor (goes out when a stable weight value is reached)

13 Sign

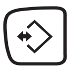
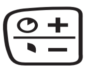
14 Identification for changed or calculated weight values, e.g. higher resolution, minimum weight not reached

1.2.3 Keypad

Main functions

Key	**Function in operating mode**	**Function in the menu**
	Switching device on / off, abort	To the last menu item `–End–`
	Setting scale to zero	Scrolling back
	Taring scale	Scrolling forward
	Transfer key Long key press: Calling up menu	Activating menu item Accepting selected setting

Additional functions

Key	**Function**
	Info key: Calling up additional information, e.g. gross weight, average piece weight, higher resolution ...
	Switching the scale
	Switching between weight value and number of pieces
	Weighing in reference or defining average piece weight numerically
	Determining average piece weight from 10 pieces
	Determining average piece weight from any number of pieces
	Entering identification
	Memory
	Sign; adding/subtracting
	Clear key
Keys 0 ... 9 and decimal point	Numerical keys for entering weight values, identifications ...

1.3 Putting into operation

1.3.1 Connecting the power supply



CAUTION!

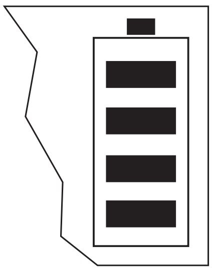
Before connecting the scale to the mains, check whether the voltage value printed on the rating plate corresponds with the local mains voltage.

▲ Never connect the device if the voltage value printed on the rating plate is different to the local mains voltage.

➜ Plug the mains plug into the socket.

After connection, the device performs a self-test. When the zero display appears, the device is ready to weigh.

➜ Calibrate the device in order to obtain the greatest possible precision, see Section 4.3.2.



Terminals with AccuPac can work independently from the mains for approximately 30 hours in normal operation. A prerequisite for this is that the background lighting is switched off and that no peripheral devices are connected.

The battery symbol indicates the present charging level of the battery. 1 segment corresponds to approx. 25 % capacity. When the symbol flashes the battery must be charged (min. 4 hours). The charging period is extended if work is continued during charging. The battery is protected against overcharging.

Note The battery's charging capacity can be reduced under continuous mains operation.

➜ To maintain the charging capacity, after a maximum of 4 weeks discharge the battery completely before recharging it.

1.3.2 Monitoring the test substances

The metrology features of the balance and any possible available adjusting weight must be checked at regular intervals within the scope of quality assurance. For this purpose, the answerable user must define a suitable interval as well as the nature and scope of this check. Information is available on KERN's home page (www.kern-sohn.com) with regard to the monitoring of balance test substances and the test weights required for this. Test weights and balances can be adjusted quickly and at a reasonable price in KERN's accredited DKD calibration laboratory (return to national normal).

1.3.3 Adjustment

General:

According to the EU guideline 90/384/EEC balances must be verified officially if they are to be used as follows (legally regulated area):

- For commercial transactions if the price of goods is determined by weighing
- For the production of medines in pharmacies as well as for analyses in the medical and pharmaceutical laboratory
- For official purposes
- For the production of finished packages

In case of doubt, please contact your local office of weights and measures.

Verification Information:

An EU qualification approval is available for those balances marked as appropriate for verification in the technical data. In the event that the balance is applied in an area subject to verification as described above, it must be officially verified and re-verified at regular intervals.

Re-verification of a balance is carried out in compliance with the respective legal provisions of the states. The term of verification validity for balances in Germany, for example, is normally 2 years.

The legal provisions of the country of use are to be observed.

2 Operation

2.1 Switching on and off

Switching on

➜ Press [ON/OFF].

The scale conducts a display test. When the weight display appears, the scale is ready to weigh.

Switching off

➜ Press [ON/OFF].

Before the display goes out, `–OFF–` appears briefly.

2.2 Zeroing / Zero point correction

Zeroing corrects the influence of slight changes on the load plate.

Manual

1. Unload scale.
2. Press [→0←].

   The zero display appears.

Automatic

In the case of scales that cannot be certified, the automatic zero point correction can be deactivated in the menu or the amount can be changed.

As standard, the zero point of the scale is automatically corrected when the scale is unloaded.

2.3 Simple weighing

1. Place weighing sample on scale.
2. Wait until the stability monitor ○ goes out.
3. Read weighing result.

2.4 Weighing with tare

2.4.1 Taring

➜ Place the empty container on the scale and press TARE.

The zero display and the symbol **NET** appear.

The tare weight remains saved until it is cleared.

2.4.2 Clearing the tare

➜ Unload scale and press TARE.

The symbol **NET** goes out, the zero display appears.

or

➜ Press C.

The symbol **NET** goes out, the gross weight appears in the display.

If `A.CL-tr` is activated in the menu, the tare weight is automatically cleared as soon as the scale is unloaded.

2.4.3 Automatic taring

Prerequisite

`A-tArE` is activated in the menu, the symbol **T** flashes in the display.

➜ Place the container or packaging material on the scale.

The packaging weight is automatically saved as the tare weight, the zero display and the symbol **NET** appear.

2.4.4 Numerical tare weight entry

1. Enter the known tare weight numerically and press TARE.

   The entered weight is automatically saved as the tare weight, the symbol **NET** and the tare weight with a minus sign appear.

2. Place the filled container on the scale.

   The net weight appears in the display.

2.4.5 Taring by calling up a saved tare value

ITT have a total of 100 memory locations for frequently used tare values, average piece weights, target weights and target quantities. In the factory setting, the memory locations 01 to 40 are reserved for tare values. The saved tare values are also preserved when the scale is switched off.

Saving tare weights

1. Determine the tare weight in one of the ways described earlier.
2. Enter the memory location number (factory setting: 1 ... 40) and keep [→T←] pressed until the confirmation appears in the display, e.g. `tArE.12`.

Note If a tare weight had already been saved under the selected memory location, the message `rEPLACE` appears in the display.

- To save the new tare weight, press [PRINT]. The old tare weight is overwritten.
- To abort the save process, press [TARE]. The previous memory location assignment remains valid.

Calling up tare weights

➜ Enter the number of the memory location with the required tare weight (factory setting: 1 ... 40) and press [→T←] briefly.

The selected tare value is loaded from the memory and appears briefly in the display. The scale tares with the selected tare value and then displays the current net weight.

Clearing saved tare weights

1. Enter the number of the memory location with the tare weight to be cleared (factory setting: 1 ... 40) and press [→T←] briefly.

   The saved tare value is displayed.
2. Press [C] within 2 seconds.

   `CLEArED` briefly appears in the display. The saved tare value is cleared.

2.4.6 Chain tare

Prerequisite

The tare function `CHAIn.tr` is activated in the menu.

With this function it is possible to tare several times if, for example, cardboard is placed between individual layers in a container.

1. Place the first container or packaging material on the scale and press [TARE].

   The packaging weight is automatically saved as the tare weight, the zero display and the symbol **NET** appear.
2. Weigh the weighing sample and read/print out the result.
3. Place the second container or packaging material on the scale and press [TARE] again.

   The total weight on the scale is saved as the new tare weight. The zero display appears.
4. Weigh the weighing sample in the second container and read/print the result.
5. Repeat the last two steps for other containers.

2.5 Displaying the capacity available



The scale has a graphic display of the scale capacity available. The bar indicates how many per cent of the scale capacity is already occupied and what capacity is still available. In the example, approx. 65 % of the scale capacity is occupied.

2.6 Dynamic weighing

With the dynamic weighing function, it is possible to weigh restless weighing samples such as live animals. If this function is activated, the symbol  appears in the display.

With dynamic weighing, the scale calculates the mean value from 56 weighing operations within 4 seconds.

With manual start

Prerequisite

`AVErAGE -> MAnuAL` is selected in the menu.

The weighing sample must be heavier than 5 scale divisions.

1. Place the weighing sample on the scale and wait until it has stabilized.
2. Press [PRINT] to start dynamic weighing.

   During dynamic weighing, horizontal segments appear in the display, and the dynamic result is then displayed with the symbol *.
3. Unload the scale to be able to start a new dynamic weighing operation.

With automatic start

Prerequisite

AVErAGE -> AUtO is selected in the menu.

The weighing sample must be heavier than 5 scale divisions.

1. Place the weighing sample on the scale.

   The scale starts the dynamic weighing automatically.

   During dynamic weighing, horizontal segments appear in the display, and the dynamic result is then displayed with the symbol *****.
2. Unload the scale to be able to perform a new dynamic weighing operation.

2.7 Weighing-in to a target weight and checkweighing

The terminal allows the weighing-in of goods to a particular target weight within defined tolerances. With this function it is possible to check whether weighed materials are within a defined tolerance range.

The terminal has a total of 100 memory locations for frequently used tare values, average piece weights, target weights and target quantities. In the factory setting, the memory locations 81 to 90 are reserved for target weights. The saved target weights are also preserved when the terminal is switched off.

2.7.1 Saving target weights

1. Enter the memory location number (factory setting: 81 ... 90) and keep [→◇] pressed until the confirmation tArGEt appears in the display.
2. Enter the target weight in the defined unit, e.g. 1.5 kg, and confirm with [PRINT].

   The display tOLER appears and **+** flashes.
3. Enter the upper tolerance in the displayed weight unit, e.g. 0.1 kg, and confirm with [PRINT]:

   -or-

➔ Press [PRINT], enter the upper tolerance range in per cent and confirm with [PRINT].

   The display tOLEr appears and **–** flashes.

4. Enter the lower tolerance accordingly.

   The scale returns to weighing mode.

Note If a target weight had already been saved under the selected memory location, the message rEPLACE appears in the display.

- To save the new target weight, press [PRINT]. The old target weight is overwritten.
- To abort the save process, press [TARE]. The previous memory location assignment remains valid.

2.7.2 Calling up target weights

➜ Enter the number of the memory location with the required target weight (factory setting: 81 ... 90) and press briefly.

The selected target weight and the tolerances are loaded from the memory and appear briefly in the display. The scale is now ready for weighing-in or check-weighing.

2.7.3 Weighing-in

1. Place the empty container on the scale and tare.
2. Fill the container with the weighing sample.



The dispensing process can be followed in the graphic display. The 50 % marking is on the far left here, so that more display segments are available for precise filling between 50 % and 100 %.

As long as the lower tolerance is not reached, the minus tolerance mark is displayed.



If the weight of the weighing sample is within the defined tolerance, the mark **OK** is visible and a short beep sounds if activated in the menu.



When the plus tolerance mark appears, the weight is above the permissible tolerance.

2.7.4 Checkweighing

1. Place the weighing sample on the scale.



2. Use the displayed mark to check whether the weighing sample is below, within or above the defined tolerance.

2.7.5 Clearing the saved target weights

1. Enter the number of the memory location with the target weight to be cleared (factory setting: 81 ... 90) and press briefly.

   The saved target weight is displayed.

2. Press C within 2 seconds.

   `CLEArED` briefly appears in the display. The saved target weight is cleared.

2.8 Working with identifications

Weighing series can be assigned 2 identification numbers ID1 and ID2 with up to 40 characters that are also printed out on the protocols.

If for example a customer number and an article number are assigned, it can be clearly seen on the protocol which article was weighed for which customer.

2.8.1 Entering identification

1. Enter identification and press [ID].

   `IdENt 1` appears in the display.

2. If the entered identification is to be saved as ID1, press [PRINT]. If the entered identification is to be saved as ID2, first press [TARE], and then press [PRINT].

   The scale returns to weighing mode.

2.8.2 Displaying identification

➜ Displaying ID1: Briefly press [ID] once.

The number currently assigned to the ID1 appears in the display. If no ID1 was assigned, `no Id` appears.

➜ Displaying ID2: Briefly press [ID] twice.

The number currently assigned to the ID2 appears in the display. If no ID2 was assigned, `no Id` appears.

2.8.3 Clearing identifications

1. Briefly press [ID] once to display ID1 or briefly press [ID] twice to display ID2.
2. Press [C] for as long as the identification is displayed.

   The clearing is briefly confirmed with the message `CLEArEd`.

2.9 Printing results

If a printer or computer is connected to the scale, the weighing results can be printed out or sent to a computer.

➜ Press [PRINT].

The display contents are printed out and transferred to the computer. See Section 8.2 for sample protocols.

2.10 Displaying info

Up to 13 different values to be displayed can be configured in the menu for the key [i].

Depending on the configuration in the menu, see Section 4.4.5, the following values can be stored in any order (for example):

- Net quantity
- Gross weight
- Average piece weight
- Average piece weight, higher resolution
- Counting accuracy

1. Press [i].
   The first value is displayed.
2. Press [i] again.
   The next value is displayed.
3. Repeat as often as necessary until the weight display appears again.

Note If [i] is not pressed again within 5 seconds, the scale automatically changes to the weight display, even if all information has not yet been queried.

2.11 Switching scales

If a second scale or a weighing platform is connected, e. g. via the optional analog second scale interface, the currently active scale is shown in the display.

The second scale can be operated in exactly the same way as the first scale.

➜ Press .
The display changes from one scale to the other.

2.12 Totalising

The terminal ITT-BA-e-0720 can totalise weight values or pieces. Individual items can also be subtracted.

A connected printer offers you the possibility of generating a printout for each individual item and/or a complete printout. For settings in the menu, see Section 4.4.2.

2.12.1 Totalising items

1. Place the first item on the scale and press .

   The weight value or the number of pieces are saved and, if necessary, printed out.
2. Unload scale.
3. Place the next item on the scale and press again.

   The weight value and the number of pieces of the next item are added to those of the previous one.
4. Unload scale.
5. Repeat steps 3 and 4 for all other items.

2.12.2 Subtracting items

1. Place the item on the scale, press and hold down .

   The weight value or the number of pieces are subtracted and, if necessary, printed out.
2. Unload scale.

2.12.3 Completing totalising

➜ When the last item has been totalised, press .

The "Final Printout" is produced. The sum memory and the item counter are cleared. The scale is ready for the next totalising process.

2.12.4 Calling up sum information

If the key is assigned accordingly, the number of items, the net sum, the gross sum and the number of pieces of the current item can be called up via this key, see Section 4.4.5.

2.13 Cleaning

CAUTION!

Electric shock hazard!

▲ Before cleaning with a damp cloth, pull out the mains plug to disconnect the unit from the power supply.

Other cleaning information:

- Use damp cloths.
- Do not use any acids, alkalis or strong solvents.
- Do not clean using a high-pressure cleaning unit or under running water.
- Follow all the relevant instructions regarding cleaning intervals and permissible cleaning agents.

3 Counting

The terminal has additional functions for piece counting. The relevant settings in the menu are described in Section 4.4.1.

3.1 Counting parts into a container

1. Place the empty container on the scale and press [TARE].

   The container is tared and the zero display appears.

2. Place **10** reference parts on the scale and press [REF 10].

   -or-

➜ Place the number of pieces displayed above the key [REF n] on the scale and press [REF n].

   The scale determines the average piece weight and then shows the number of pieces.

3. Add more parts to the container until the required number of pieces is reached.
4. When the piece counting is completed, press the key [C] to clear the result.

   The scale is ready for the next weighing or counting.

Note

- The average piece weight remains saved in the factory setting until a new average piece weight is determined.
- With [switch key] it is possible to switch between the number of pieces and the weighing units preset.
- Depending on the assignment, it is possible to display the average piece weight, i. e. the weight of an individual reference unit, with [i].
- If `A.CL-APW ON` is set in the menu, the average piece weight is automatically cleared after each counting operation. The average piece weight must be determined again for the next counting operation.
- If `ACCurCY ON` is set in the menu, the accuracy achieved is briefly shown after the number of pieces is determined.

3.2 Counting parts out of a container

1. Place the full container on the scale and press [TARE].

   The container is tared and the zero display appears.
2. Remove **10** reference parts and press [REF 10].

   -or-

➜ Remove the number of pieces displayed above the key [REF n] and press [REF n].

   The scale determines the average piece weight and then shows the number of pieces removed, together with a minus sign.
3. Remove more parts from the container until the required number of pieces is reached.

3.3 Counting with variable reference quantity

Prerequisite

`VAr-SPL ON` must be set in the menu.

1. Place any number of reference parts on the scale.
2. Enter the number of reference parts with the numerical keypad and press [REF n].

   The scale determines the average piece weight and then shows the number of pieces.

The rest of the counting process is as described earlier.

3.4 Counting with minimum accuracy

The item `Min.rEFW` in the menu allows to preset a minimum accuracy of 97.5 %, 99.0 % or 99.5 %. On the basis of this, the scale calculates the minimum reference weight necessary to reach the defined accuracy.

1. Place the reference parts on the scale and press [REF 10] or [REF n].
2. If the average piece weight is not sufficient to ensure the desired accuracy, `Add x` **PCS** appears.
3. Add the displayed number of pieces.

   The scale then automatically determines the average piece weight with the larger reference quantity.

The rest of the counting process is as described earlier.

3.5 Reference optimization

The greater the reference quantity, the more accurately the scale determines the number of pieces.

3.5.1 Automatic reference optimization

`rEF.OPt` -> `AUtO` must be set in the menu for this. The symbol **Auto Opt** appears in the display.

1. Place the reference parts on the scale and press [REF 10] or [REF n].
2. Place additional reference parts, max. the same number as for the first reference determination, on the scale.

   The scale automatically optimises the average piece weight with the larger number of reference parts.

The rest of the counting process is as described earlier.

Note The reference optimization can be performed several times.

3.6 Counting with automatic reference determination

Prerequisite

`A-SMPL ON` is set in the menu.

➜ Place the number of pieces displayed above the key [REF n] into the container.

The scale automatically determines the average piece weight and then shows the quantity.

The rest of the counting process is as described earlier.

3.7 Counting with a known average piece weight

➜ Enter the known average piece weight via the numerical keypad and press [REF].

The scale changes the unit to PCS.

The rest of the counting process is as described earlier.

3.8 Counting by calling up a saved average piece weight

The terminal ITT-BA-e-0720 has a total of 100 memory locations for frequently used tare values, average piece weights, target weights and target quantities. In the factory setting, the memory locations 41 to 80 are reserved for average piece weights. The saved average piece weights are also preserved when the terminal is switched off.

3.8.1 Saving average piece weights

1. Determine the average piece weight in one of the ways described earlier.
2. Enter the memory location number (factory setting: 41 ... 80) and keep [→◇] pressed until the confirmation appears in the display, e.g. `APW.41`.

Note If an average piece weight had already been saved under the selected memory location, the message `rEPLACE` appears in the display.

- To save the new average piece weight, press [PRINT]. The old average piece weight is overwritten.
- To abort the save process, press [TARE]. The previous memory location assignment remains valid.

3.8.2 Calling up average piece weights

➜ Enter the number of the memory location with the required average piece weight (factory setting: 41 ... 80) and press [→◇] briefly.

The selected reference value is loaded from the memory and appears briefly in the display. The scale determines the number of pieces with the selected reference value.

3.8.3 Clearing saved average piece weights

1. Enter the number of the memory location with the average piece weight to be cleared (factory setting: 41 ... 80) and press [→◇] briefly.

   The saved average piece weight is displayed.
2. Press [C] within 2 seconds.

   `CLEArED` briefly appears in the display. The saved average piece weight is cleared.

3.9 Counting by calling up a saved target quantity

The terminal ITT-BA-e-0720 has a total of 100 memory locations for frequently used tare values, average piece weights, target weights and target quantities. In the factory setting, the memory locations 91 to 100 are reserved for target quantities. The saved target quantities are also preserved when the terminal is switched off.

3.9.1 Saving target quantities

1. Enter the memory location number (factory setting: 91 ... 100) and keep [⇥] pressed until the confirmation `tARGEt` appears in the display.
2. Enter the target quantity and confirm with [PRINT].

   The display `tOLEr` appears and **+** flashes.
3. Enter the upper tolerance in pieces and confirm with [PRINT].

   The display `tOLEr` appears and **–** flashes.
4. Enter the lower tolerance accordingly.

   The scale returns to weighing mode.

Note If a target quantity had already been saved under the selected memory location, the message `rEPLACE` appears in the display.

- To save the new target quantity, press [PRINT]. The old target quantity is overwritten.
- To abort the save process, press [TARE]. The previous memory location assignment remains valid.

3.9.2 Calling up target quantities

➔ Enter the number of the memory location with the required target quantity (factory setting: 91 ... 100) and press [⇥] briefly.

The selected target quantity and the associated tolerances are loaded from the memory and appear briefly in the display.

3.9.3 Counting in to target quantities

1. Place the empty container on the scale and tare.
2. Specify a reference.
3. Fill the container with the material being counted.



The counting-in process can be followed in the graphic display. The 50 % marking is on the far left here, so that more display segments are available for precise filling between 50 % and 100 %.

As long as the lower tolerance is not reached, the minus tolerance mark is displayed.



If the counted-in number of pieces is within the defined tolerance, the mark **OK** is visible and a short beep sounds if activated in the menu.



When the plus tolerance mark appears, the number of pieces is above the permissible tolerance.

3.9.4 Clearing saved target quantities

1. Enter the number of the memory location with the target quantity to be cleared (factory setting: 91 ... 100) and press [→◇] briefly.

   The saved target quantity with tolerances is displayed.

2. Press [C] within 2 seconds.

   `CLEArED` briefly appears in the display. The saved target quantity is cleared.

3.10 Counting with two scales

For piece counting, it is possible to connect a second scale or weighing platform, e. g. a floor scale for counting a large number of pieces via the optional analog second scale interface.

The necessary settings for the application and interface parameters are described in the Sections 4.4.1, 4.6.1 and 4.6.4.

3.10.1 Counting with a reference scale

Prerequisite

The connected second scale is configured as reference scale.

1. Place the reference parts on the reference scale and press [REF 10] or [REF n].

   The scale determines the average piece weight and changes to the display in pieces (PCS).

2. Place the parts to be counted on the first scale.

   The total quantity is displayed.

Note

- If `tOtAL-Ct` -> `bULK` is set in the menu, only the number of pieces on the bulk scale is displayed.
- If `tOtAL-Ct` -> `bOtH` is set in the menu, the reference quantity is added to the bulk quantity.

3.10.2 Counting with a bulk scale

Prerequisite

The connected second scale is configured as bulk scale.

1. Place the reference parts on the first scale and press [REF 10] or [REF n].

   The scale determines the average piece weight and changes to the display in pieces (PCS).

2. Place the parts to be counted on the bulk scale.

   The total quantity is displayed.

Note

- If `tOtAL-Ct` -> `bULK` is set in the menu, only the number of pieces on the bulk scale is displayed on the bulk scale.
- If `tOtAL-Ct` -> `bOtH` is set in the menu, the reference quantity is added to the bulk quantity.

3.10.3 Counting with an auxiliary scale

Note This configuration allows counting of diverse parts, for example very small parts on one scale and large parts on the other scale.

Prerequisite

The connected second scale is configured as an auxiliary scale. The scale doesn't change automatically but only after pressing the  key.

1. Activate the appropriate scale.
2. Place the reference parts on this scale and press [REF 10] or [REF n].

   The scale determines the average piece weight and changes to the display in pieces (PCS).

3. Place the parts to be counted on the same scale.

   The number of pieces is displayed.

4 Settings in the menu

Settings can be changed and functions can be activated in the menu. This enables adaptation to individual weighing requirements.

The menu consists of 6 main blocks containing various submenus on several levels.

4.1 Operating the menu

4.1.1 Calling up the menu and entering the password

The menu differentiates between 2 operating levels: Operator and Supervisor. The Supervisor level can be protected by a password. When the device is delivered, both levels are accessible without a password.

Operator menu

1. Press PRINT and keep it pressed until COdE appears.
2. Press PRINT again.

   The menu item tErMINL appears. Only the submenu dEVICE is accessible.

Supervisor menu

1. Press PRINT and keep it pressed until COdE appears.
2. Enter the password and confirm with PRINT.

   The first menu item SCALE appears.

Note No supervisor password has been defined when the device is first delivered. Therefore respond to the password inquiry with PRINT when you call up the menu for the first time.

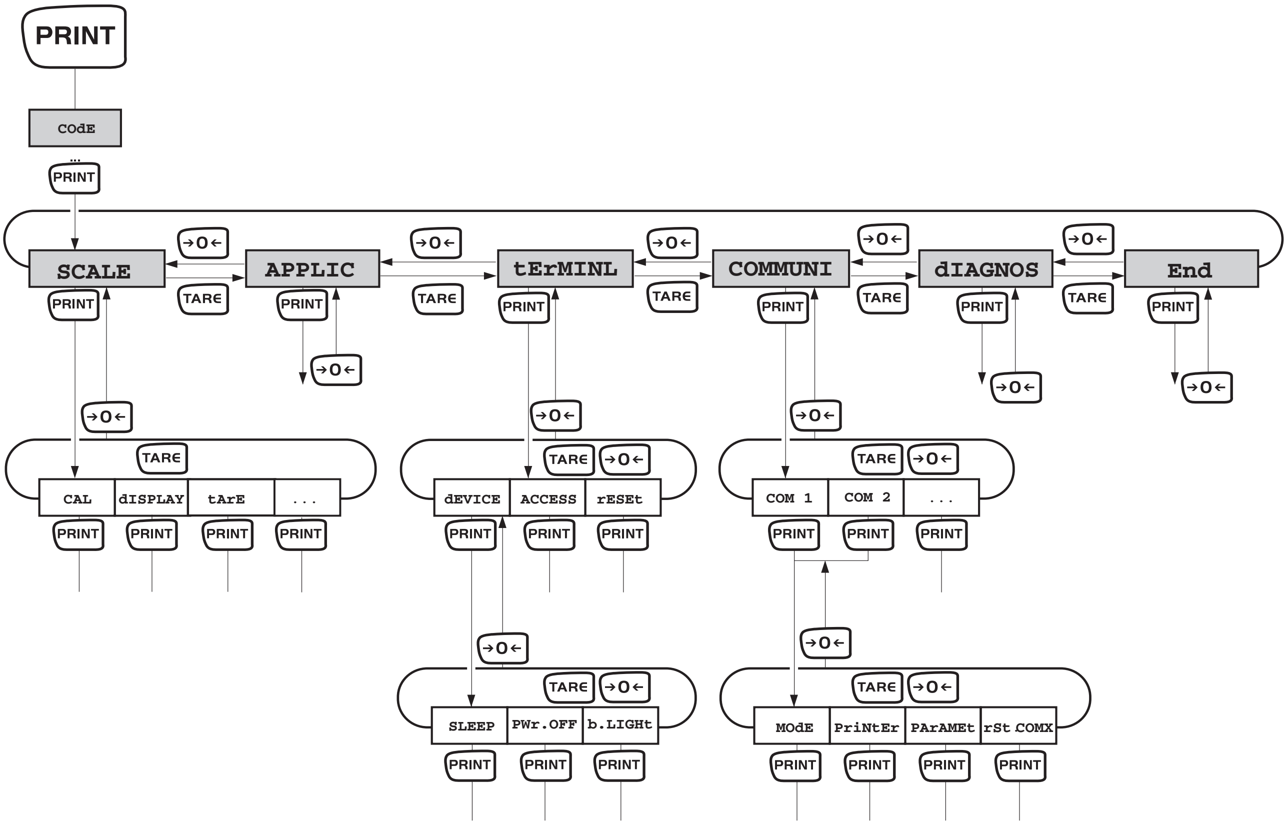
If a password has still not been entered after a few seconds, the scale returns to weighing mode.

Emergency password for Supervisor access to the menu

If a password has been issued for Supervisor access to the menu and you have forgotten it, you can still enter the menu:

➜ Press →0← 3 times and confirm with PRINT.

4.1.2 Selecting and setting parameters



Scrolling on one level

➜ Scroll forward: Press TARE.

➜ Scroll back: Press →0←.

Activating menu items/ accepting selection

➜ Press PRINT.

Exiting menu

1. Press ON/OFF.
   The last menu item END appears.
2. Press PRINT.
   The inquiry SAVE appears.
3. Confirm inquiry with PRINT to save the settings and return to weighing mode.

-or-

➜ Press TARE to discard changes and return to weighing mode.

4.2 Overview

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Page
SCALE	SCALE1/SCALE2					34
	CAL					34
	dISPLAY	UNIt1	g, **kg**, oz, lb, t			36
		UNIt2	**g**, kg, oz, lb, t			
		rESOLU				
		UNt.rOLL	ON, **OFF**			
	tArE	A-tArE	ON, **OFF**			36
		ChAIn.tr	**ON**, OFF			
		A.CL-tr	ON, **OFF**			
	ZErO	AZM	OFF; 0.5 d; 1 d; 2 d; 5 d; 10 d			36
	rEStArt	ON/**OFF**				37
	FILtEr	VibrAt	LOW, **MEd**, HIGH,			37
		PrOCESS	**UNIVEr**, dOSING			
		StABILI	FASt, **StAndrd**, PrECISE			
	rESEt	SUrE?				38
APPLIC	COUNt	VAr-SPL	ON, **OFF**			38
		SPL-qtY	Sq1 ... Sq5			
		Min.reFW	**OFF**, 97.5%, 99.0%, 99.5%			
		rEF OPt	**OFF**, AUtO			
		A-SMPL	ON, **OFF**			
		A.CL-APW	ON, **OFF**			
		ACCurCY	ON, **OFF**			
		tOtAL.Ct	**bULK**, bOth			
	ACCUMUL	Print	COM1, COM2	LOt.PrNt		39
				FIN.PrNt		
				SUMMArY		
		rEACH Z	ON, **OFF**			
	CHECKW	bEEPEr	ON, **OFF**			40
		SP.tOL-				
		SENd.MOd	CONtINU, StAbLE			
	MEMOrY	CONFIG				40
		CLEAr.M	SUrE?			

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Page
	inFO.KEY	INFO 1 ... INFO 13	Not.USEd, PCS NEt, GrOSS, tArE, APW, HIGHrES, ACCurCY, n, G tOtAL, N tOtAL, PCS.tOtL, tArGEt, dAtE, timE			41
	AVErAGE	**OFF**, AUtO, MAnuAL				41
	rESEt	SUrE?				41
tERMINL	dEVICE	SLEEP	**OFF**, 1 min, 3 min, 5 min			42
		PWr OFF	**YES**, NO			
		b.LIGHt	ON, **OFF**			
		dAtE.tim	dAtE.FOr, dAtE, timE, AM.PM			
		bEEP	ON, **OFF**			
	ACCESS	SUPErVI				42
	rESEt	SUrE?				43
COMMUNI	COM 1/COM 2	MOdE	**Print**			43
			A.Print			
			CONtINU			
			dIALOG			
			CONt.OLd			
			dIAL.OLd			
			dt-b	GrOSS	ON, OFF	
				tArE	ON, OFF	
				nEt	ON, OFF	
			dt-G	GrOSS	ON, OFF	
				tArE	ON, OFF	
				nEt	ON, OFF	
			COnt-Wt			
			COnt-Ct			
			bArc.rd			
			2nd.dISP			
			rEF			
			bULK			
			AuXILIA			

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Page
		PriNtEr	tEmPLat	**StdArd**, tEMPLt1, tEMPLt2		44
			ASCi.Fmt	LINE.FMt	**MULtI** SIN-GLE	
				LENGtH	1 ... 100	
				SEPArAt	, ;...	
				Add LF	0 ... 9	
		PArAMEt	bAUd	300 ... 38400		44
			PAritY	7 nonE, 8 nonE, 7 odd, 8 odd, **7 EVEN**, 8 EVEN		
			H.SHAKE	NO, **XONXOFF**, nEt 422, nEt 485		
			NEt.Addr	0 ... 31		
			ChECSuM	ON, **OFF**		
			Vcc	ON, **OFF**		
		rSt.COMx	SUrE?			44
COMMUNI	OPtION	EtH.NEt	IP.AddrS, SUbNEt, GAtEWAY			44
		USb	USb tESt			44
		diGitAL	IN 1 ... 4	**OFF**, ZErO, tArE, Print, CLEAr, rEF 10, rEF n, SCALE, inFO, Unit, tOtAL+, tOtAL–		44
			OUT 1 ... 4	**OFF**, StAbLE, bEL.Min, AbV.Min, bEL.tOL-, AbV.tOL+, GOOd, UndErLd, OVErLd, StAr		
		ANALOG	Mode	**rEF**, bULK, AuXILIA, bYPASS		44
	dEF.PrN	tEMPLt1/ tEMPLt2	LINE 1 ... LINE 20	**NOt.USEd**, HEAdEr, dAte, timE, Id1, Id2, SCALE.NO, GrOSS, tArE, nEt, APW, rEF Ct, PCS, tArGEt, dEVIAt, ACC NEt, ACC GrS, ACC PCS, ACC LOt, StArLN, CrLF, F FEEd		46

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Page
dIAGNOS	tESt SC	ExtErN				47
	KboArd					
	dISPLAY					
	SNr					
	SNr2					
	LiSt					
	LiSt2					
	LiSt.M					
	WOrK.tim	timE	SHOW.tIM			
		WEIGH	SHOW.WGH			
	rESEt.AL	SUrE?				

4.3 Scale settings (SCALE)

4.3.1 SCALE1/SCALE2 – Selecting scale

This menu item only appears if an analog second scale or a weighing platform is connected.

4.3.2 CAL – calibration (adjustment)

As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated – in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory). This adjustment process must be carried out during the initial start-up, after change in location and variation of surrounding temperature. It is also recommendable to adjust the balance periodically during weighing operation in order to obtain exact measured values.

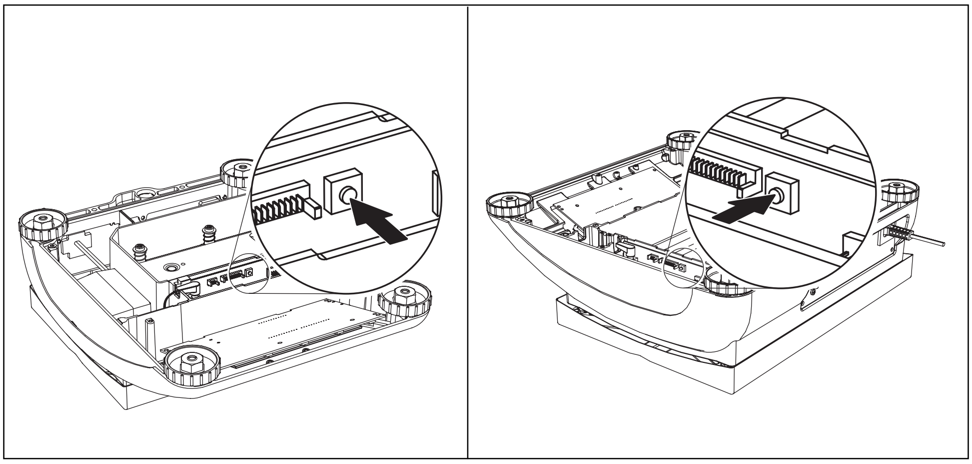
This menu item is not available for certified scales without internal calibration weight.

Adjusting of non verifiable balances

CAL	1. Unload scale. 2. Activate menu item CAL with PRINT. The scale determines the zero point. –0– appears in the display. The calibration weight to be placed on the scale then flashes in the display. 3. If necessary, change the weight value displayed with TARE. 4. Place the calibration weight on the scale and confirm with PRINT. The scale calibrates with the calibration weight loaded. After calibration is completed, –donE– appears briefly in the display, and the scale automatically returns to weighing mode.

Adjusting of verifiable balances

- Switch off the scale.
- Remove the scale bottom plate by undoing the Torx TX20 retaining screws .Important: In order to remove the bottom plate it is necessary to break the certification seal affixed to it! Once this seal has been destroyed, the scale must be recertified
- Hold down the service switch (pushbutton) on the analogprint (indicated by an arrow in the drawings below, while at the same time switching on the scale. Keep the service switch pressed in until "Scale" appears in the display .



1.Display "Scale":Press the [PRINT]-key (within 20sec)

2.Display "Metrolo":Press the [TARE]-key

3.Display "Scale1":Press the [PRINT]-key

4.Display "ramp":Press the [TARE]-key

5.Display "SNR":Press the [TARE]-key

6.Display "SCAL.bld":Press the [TARE]-key

7.Display "GEO" (adjustment by means of GEO value):

The GEO value can be set in this block and the balance also adapted to the local gravity ratios without adjusting weights.

Case a)You are familiar with the GEO values.

Once the [PRINT]-key has been pressed, the current GEO value will be displayed.

Press the [TARE] or [→0←]-key, in order to alter the GEO value. . The next value is displayed every time the key is pressed (adjustment range: 0 - 31). See the GEO value chart in chapter 7.1.1 for the appropriate value.

Confirm the selected GEO value using the [PRINT]-key.

Please note: The GEO value may not be readjusted following this "adjustment by means of GEO value", as this would cause the set adjusting values to become invalid.

Case b)You are NOT familiar with the GEO values. In this case adjustment must be made using adjusting weights (see item 9.).

Press the [TARE]-key.

8.Display "LIN-CAL:" Press the TARE -key.

9.Display "CAL:" Press the PRINT -key.

The scale determines the zero point. -preload- appears in the display. Press the PRINT -key. The calibration weight to be placed on the scale then flashes in the display.

If necessary, change the weight value displayed with TARE

Place the calibration weight on the scale and confirm with PRINT

The scale calibrates with the calibration weight loaded. After calibration is completed, -done- appeats briefly in the display.

Return to weighing mode:

Press the ON/OFF -key, "END" will appear on the display

Press the PRINT -key, order to save the alterations. "Save" will appear on the display.

Press PRINT -key. to confirm. Following this the balance will return to weighing mode.

4.3.3 DISPLAY – weighing unit and display accuracy

UNIt1	Select weighing unit 1: g, kg, oz, lb, t
UNIt2	Select weighing unit 2: g, kg, oz, lb, t
rESOLU	Select readability (resolution), model-dependent
UNt.rOLL	When UNT.rOLL is switched on, the weight value can be displayed in all available units and as pieces with .
Notes	• On certified scales, the weighing units oz and lb are displayed with the symbol *. • On certified scales, resolutions that deviate from the scale definition are displayed without a weighing unit and with the symbol *****. • On dual-range/dual interval scales, resolutions marked with **I<–> 1/2I** are divided up into 2 weighing ranges / intervals, e.g. 2 x 3000 d.

4.3.4 TARE – tare function

A-tArE	Switching on/off automatic taring
CHAIn.tr	Switching on/off chain tare
A.CL-tr	Switching on/off automatic taring with automatic clearing of the tare weight when the load is removed from scale

4.3.5 ZERO – automatic zero update

AZM	On certified scales, this menu item does not appear. Switching on/off automatic zero update and selecting zeroing range. Possible settings: OFF; 0.5 d; 1 d; 2 d; 5 d; 10 d

4.3.6 RESTART – automatic saving of zero point and tare value

ON/OFF	When the Restart function is activated, the last zero point and tare value are saved. After switching off / on or after a power interruption, the device continues to work with the saved zero point and tare value.

4.3.7 FILTER – adaptation to the ambient conditions and the weighing type

VIbrAt	Adaptation to the ambient conditions
LOW	• Very steady and stable environment. The scale works very quickly, but is very sensitive to external influences.
MEd	• Normal environment. The scale operates at medium speed.
HIGH	• Restless environment. The scale works more slowly, but is insensitive to external influences.

PrOCESS	Adaptation to the weighing process
UNIVEr	• Universal setting for all weighing samples and normal weighing goods
dOSING	• Dispensing liquid or powdery weighing samples
StAbILI	Adjusting the weighing speed
FASt	• The scale operates very fast.
StAndrd	• The scale operates at medium speed.
PrECISE	• The scale operates with the greatest possible reproducibility.
	The slower the scale works, the greater the reproducibility of the weighing results.

4.3.8 RESET – resetting scale settings to factory settings

SUrE?	Confirmation inquiry
	• Reset the scale settings to factory settings with PRINT
	• Do not reset scale settings with TARE

4.4 Application settings (APPLICATION)

4.4.1 COUNT – settings for counting

VAr-SPL	Adaptation of the reference quantity
ON	• The reference quantity can be changed in operating mode
OFF	• Counting only with defined reference quantities
Min.reFW	Monitoring the minimum reference weight
OFF	• No monitoring of the minimum reference weight
97.5, 99.0, 99.5	• Monitoring the minimum reference weight so that a counting accuracy of 97.5 %, 99.0 % or 99.5 % is achieved
rEF.OPt	Optimizing the average piece weight
OFF	• No reference optimization
AUtO	• Automatic reference optimization

A-SMPL	Automatic determination of the average piece weight
ON	• After taring, the average piece weight is determined with the next weight placed on the scale and the displayed reference quantity
OFF	• No automatic determination of the average piece weight
A.CL-APW	Automatic clearing of the average piece weight
ON	• When the load is taken off the scale after a counting operation, the average piece weight is automatically cleared. The next counting operation begins with determining the average piece weight again.
OFF	• The average piece weight must be cleared manually by pressing C
ACCurCY	Displaying the counting accuracy
ON	• After the average piece weight is determined, the counting accuracy that can be achieved is shown briefly in the display.
OFF	• No counting accuracy display
tOtAl.Ct	Counting on two scales
bULK	• Display number of pieces for the parts on the bulk scale only
bOth	• Display number of pieces for all parts on the bulk and the reference scale

4.4.2 ACCUMULATION – totalising

PrINt	Configure printout for accumulation
COM 1/COM 2	Select interface for the connected printer / computer
LOt.PrINt	• Printout for each individual item
FIN.PrINt	• Printout only at the end of accumulation
SUMMArY	• Additional printout of the individual items after completion of accumulation
rEACH Z	Reach a stable zero point between two items
ON	• All load must first be removed from the scale before accumulation of the next item is possible
OFF	• No load removal requested between two items

4.4.3 CHECKWEIGHING

bEEPEr	Setting the beep for checkweighing
ON	• A short beep sounds when the target value is reached
OFF	• No beep
SP.tOL-	Limit for activation of the I/O relay box. The value to be entered is the percentage proportion of the lower tolerance of the target weight / target quantity. EXAMPLE Target weight:2000 g tOLER+:2010 g tOLER-:1990 g SP.tOL-:010 (%) The relay box is not activated until 199 g (= 10 % of 1990 g) is reached.
SENd.MOd	Defines the form in which the scale sends information to the I/O relay box
CONtINU	• Information is permanently sent
StAbLE	• Information is only sent if the weight value is stable

4.4.4 MEMORY – configuring memory

CONFIG	Configuring the memory partitions.
40-40-10	ITT-BA-e-0720 have a total of 100 memory localizations that can be assigned to tare values, average piece weights, target weights and target quantities. Factory settings: • 40 memory locations for tare values (01-40) • 40 memory locations for average piece weights (41-80) • 10 memory locations with target weights (81-90) • 10 memory locations with target quantities (91-100) The first target weight is called up e.g. with memory address No. 81. Changing the range for the memory locations: 1. Enter the new range and separate each range with a point (e. g. 30.30.20). The last range is automatically calculated. If an invalid entry is made, NOt.ALLO is shown in the display. 2. Confirm with [PRINT]. Since only some of the entered values can be shown in the display, the display can be moved to the right with the aid of the [TARE] key. **Note** ➜ After every new partitioning, always check the memory values and adjust if necessary!
CLEAr.M	Clearing all memories.

4.4.5 INFO-KEY – assignment of the Info key

INFO1	Up to 13 additional values can be displayed via the key [i].
NOt.USEd	• Info space not occupied
PCS NEt	• Displays net weight in counting
GrOSS	• Displays gross weight
tArE	• Displays tare weight
APW	• Displays average piece weight
HIGHrES	• Shows display with a higher resolution
ACCUrCY	• Displays counting accuracy
n	• Displays number of totalised items
G tOtAL	• Displays gross sum
N tOtAL	• Displays net sum
PCS.tOtL	• Displays sum of pieces
tArGEt	• Displays target value and tolerances
dAtE	• Displays date
timE	• Displays time
INFO2 ... INFO13	As per INFO1

4.4.6 AVERAGE – determining the average weight for an unstable load

OFF	Calculating average weight switched off
AUtO	Calculating average weight with automatic start of the weighing cycle
MAnuAL	Calculating average weight with manual start of the weighing cycle via [PRINT]

4.4.7 RESET – resetting application settings to factory settings

SUrE?	Confirmation inquiry • Reset the application settings to factory settings with [PRINT] • Do not reset the application settings with [TARE]

4.5 Terminal settings (TERMINAL)

4.5.1 DEVICE – Sleep mode, energy-saving mode and display backlighting

SLEEP	This menu item only appears on devices in mains operation. When SLEEP is activated, the scale switches off display and backlighting after the time period set when not in use. The display and backlighting are switched on again at the press of a key or if the weight changes. Possible settings: OFF, 1 min, 3 min, 5 min
PWr OFF	This menu item only appears on devices in battery operation. When PWr OFF is activated, the device switches itself off automatically after approx. 3 minutes when not in use.
b.LIGHt	Switching the display backlighting on/off. On scales with a battery, the background lighting switches itself off automatically if there has been no activity on the scale for 5 seconds.
DAtE.tim	Setting date and time
DAtE.FOr	• Select type of date setting: EU or US
DAtE	• Enter the date in the selected format
tIME	• Enter the time
AM.PM	• Select AM/PM
bEEP	Switching beep on/off
ON	Switching on beep on each key press
OFF	Switching off beep on each key press
Note	This menu item is accessible without a Supervisor password.

4.5.2 ACCESS – password for Supervisor menu access

SUPErVI	Password entry for Supervisor menu access
ENtER.C	Request to enter password ➜ Enter the password and confirm with [PRINT]
rEtYPE.C	Request to repeat the password entry ➜ Enter the password again and confirm with [PRINT]
Notes	• The password can consist of up to 4 characters. • The key [PRINT] must not be part of the password. It is required for confirming the password. • The key [→0←] may only be used in combination with another key. • If you enter an impermissible code or make a typing error in the repetition, COdE.Err. appears in the display.

4.5.3 RESET – resetting terminal settings to the factory settings

SUrE?	Confirmation inquiry • Reset terminal settings to the factory settings with PRINT • Do not reset the terminal settings with TARE

4.6 Configuring interfaces (COMMUNICATION)

4.6.1 COM1/COM2 -> MODE – operating mode of the serial interface

Print	Manual data output to the printer with PRINT
A.Print	Automatic output of stable results to the printer (e. g. for series weighing operations)
CONtINU	Ongoing output of all weight values via the interface
dIALOG	Bi-directional communication via MT-SICS commands, control of the scale via PC
CONt.OLd	As per `CONtINU`, see above, but with 2 fixed blanks in front of the unit (compatible with Spider 1/2/3)
dIAL.OLd	As per `dIALOG`, see above, but with 2 fixed blanks in front of the unit (compatible with Spider 1/2/3)
dt-b GROSS tArE nEt	DigiTOL-compatible format. • Transfer of the gross weight, identified with "G" • Transfer of the tare weight • Transfer of the net weight
dt-G	As per `dt-b`, see above, gross weight identified with "G"
COnt-Wt	TOLEDO Continuous mode
COnt-Ct	TOLEDO Continuous mode, transfer of the number of pieces
bArc.rd	For connecting a serial bar code reader (automatically activates the 5-V voltage supply at Pin 9)
2nd.dISP	For connecting a second display (automatically activates the 5-V voltage supply at Pin 9)
rEF	Data transfer from the reference scale (automatic switchover)
bULK	Data transfer from the quantity scale (automatic switchover)
AuXILIA	Data transfer from the reference or quantity scale (manual switchover)

4.6.2 COM1/COM2 -> PRINTER – settings for protocol printout

This menu item only appears if the mode "Print" or "A.Print" is selected.

tEmPLat StdArd tEmPLt1 tEmPLt2	Selecting protocol printout • Standard printout • Printout in accordance with Template 1 • Printout in accordance with Template 2
ASCi.FmtT LINE.Fmt LENGtH SEPArAt Add LF	Selecting formats for the protocol printout • Line format: MULtI (multi-line) or SINGLE (single-line) • Line length: 0 ... 100 characters, appears only with line format MULtI • Separator: , ; . / \ _ and space; appears only with line format SINGLE • Line feed: 0 ... 9

4.6.3 COM1/COM2 -> PARAMET – communication parameter

bAUd	Selecting baud rate: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400 baud
PAritY	Selecting parity: 7 none, 8 none, 7 odd, 8 odd, 7 even, 8 even
H.SHAKE	Selecting Handshake: NO, XONXOFF, nEt422, nEt485 (network operation as per RS485 standard via the optional RS422/RS485 interface, only for COM1)
NET.Addr	Assigning network address: 0 ... 31, only for NET 485
ChECSuM	Activating checksum byte (appears only in TOLEDO Continuous mode)
Vcc	Switching 5V voltage, e.g. for a bar code reader, on / off

4.6.4 COM1/COM2 -> RESET COM1/RESET COM2 – resetting serial interface to factory settings

SUrE?	Confirmation inquiry • Reset interface settings to factory settings with PRINT • Do not reset the interface settings with TARE

4.6.5 OPTION – configuring options

If no option is installed or is not yet configured, N.A. appears in the display.

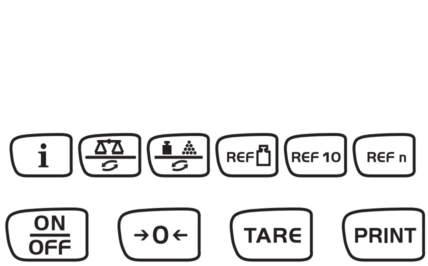
EtH.NEt IP.AddrS SUBNEt GAtEWAY	Configuration of the Ethernet interface • Enter IP address • Enter Subnet address • Enter Gateway address
USb USb TEST	not documented
diGitAL	not documented

IN 1 ... 4	
OFF	
ZErO	
tArE	
PriNt	
CLEAr	
rEF 10	
rEF n	
SCALE	
inFO	
UNIt	
totAL+	
totAL-	
OUT 1 ... 4	
OFF	
StAbLE	
bEL.MIN	
AbV.MIN	
bEL.tOL	
AbV.tOL	
GOOd	
UNdErLd	
OVErLd	
StAr	
ANALOG	Configuration of the analog second scale interface
Mode	Operating mode of the second scale
rEF	• Second scale can only be used to determine the average piece weight
bULK	• Second scale can only be used as bulk scale
AuXILIA	• No difference between reference and bulk scale, all functions available on the scale selected
BYPASS	• Second scale interface not assigned

4.6.6 DEF.PRN – configuring templates

tEMPLt1/tEMPLt2	Selecting Template 1 or Template 2
LINE 1 ... 20	Select line
NOt.USEd	• Line not used
HEAdEr	• Line as header. The contents of the header must be defined via an interface command, see Section 5.1.
dAtE	• Date
timE	• Time
SCALE.NO	• Scale number
GROSS	• Gross weight
tArE	• Tare weight
nEt	• Net weight
APW	• Average piece weight
rEF Ct	• Reference quantity
PCS	• Pieces
tArGEt	• Target value
dEVIAt	• Deviation from the target value
ACC.NEt	• Totalised net weight
ACC.GrS	• Totalised gross weight
ACC.PCS	• Totalised number of pieces
ACC.LOt	• Totalised no. of items
StARLN	• Line with ***
CrLF	• Line feed (blank line)
F FEEd	• Page feed

4.7 Diagnosis and printing out of the menu settings (DIAGNOS)

tESt SC External	Testing scale with external calibration weight 1. The scale checks the zero point. `-0-` appears in the display. The test weight flashes in the display. 2. If necessary, change the weight value displayed with TARE. 3. Put the calibration weight on the scale and confirm with PRINT. 4. The scale checks the calibration weight put on them. 5. After the test is completed, the deviation from the last calibration briefly appears in the display, ideally `*d=0.0g`, after which the scale changes to the next menu item `KboArd`.
KboArd `PUSH 1 ... 25`	Keyboard test • Press the keys in the following order:  If the key works, the scale changes to the next key. **Note** You cannot abort the keyboard test! If you have selected the menu item `KboArd`, you must press all keys.
dISPLAY	Display test: The scale displays all functioning segments
SNr	Display of the serial number
SNr2	Display of the serial number of scale 2. This menu item only appears if an analog second scale is connected.
LiSt	Printout of a list of all menu settings
LiSt2	Printout of a list of all menu settings of scale 2. This menu item only appears if an analog second scale is connected.
LiSt.M	Printout of a list of all values and settings in the memory

WOrK.tim timE SHOW.tim WEIGH SHOW.WGH	Display of the operating time of the scale and the number of weighing operations performed • Operating time in hours, e.g. 56 h • Number of weighing operations, e. g. 135
rESEt.AL SUrE?	Resetting all menu settings to the factory settings Confirmation inquiry • Reset all menu settings to the factory settings with PRINT • Do not reset the menu settings with TARE

5 Interface description

5.1 SICS interface commands

The terminal supports the command set MT-SICS (METTLER TOLEDO **S**tandard **I**nterface **C**ommand **S**et). With SICS commands, it is possible to configure, query and operate the terminal from a PC. SICS commands are divided up into various levels.

5.1.1 Available SICS commands

	Command	**Meaning**
LEVEL 0	@	Reset the scale
	I0	Inquiry of all available SICS commands
	I1	Inquiry of SICS level and SICS versions
	I2	Inquiry of scale data
	I3	Inquiry of scale software version
	I4	Inquiry of serial number
	S	Send stable weight value
	SI	Send weight value immediately
	SIR	Send weight value repeatedly
	Z	Zero the scale
	ZI	Zero immediately
LEVEL 1	D	Write text into display
	DW	Weight display
	K	Keyboard check
	SR	Send and repeat stable weight value
	T	Tare
	TA	Tare value
	TAC	Clear tare
	TI	Tare immediately

	Command	Meaning
LEVEL 2	C2	Calibrate with the external calibration weight
	C3	Calibrate with the internal calibration weight
	I10	Inquire or set scale ID
	DAT	Inquire or set current date
	I11	Inquiry of scale type
	P100	Print out on the printer
	P101	Print out stable weight value
	P102	Print out current weight value immediately
	PWR	Power On/Off
	SIRU	Send weight value in the current unit immediately and repeat
	SIU	Send weight value in the current unit immediately
	SNR	Send stable weight value and repeat after every weight change
	SNRU	Send stable weight value in the current unit and repeat after every weight change
	SRU	Send weight value in the current unit and repeat
	ST	After pressing the Transfer key, send the stable weight value
	SU	Send stable weight value in the current unit
	TIM	Inquire or set the time
	TST2	Start test function with external weight
	TST3	Start test function with internal weight
LEVEL 3	I12	ID1
	I13	ID2
	PW	Average piece weight
LEVEL SPECIAL	CLR	Clear
	DS	Short beep
	I31	Header for the printout
	ICP	Send configuration of the printout
	LST	Send menu settings
	M01	Weighing mode
	M02	Stability setting
	M03	Autozero function
	M19	Send calibration weight
	M21	Inquire/set weight unit
	P	Print text
	P130	Weight value, unit and price
	PCS	Number of pieces

	Command	Meaning
	PM	Set values for checkweighing
	PRN	Print out at every printer interface
	REF	Average piece weight
	RST	Restart
	SFIR	Send weight value immediately and repeat quickly
	SIH	Send weight value immediately in high resolution
	SWU	Switch weight unit
	SX	Send stable data record
	SXI	Send data record immediately
	SXIR	Send data record immediately and repeat
	U	Switch weight unit

5.1.2 Requirements for communication between scale and PC

- The scale must be connected to the RS232, RS485, USB or Ethernet interface of a PC with a suitable cable.
- The interface of the scale must be set to "Dialog" mode, see Section 4.6.1.
- A terminal progam must be available on the PC, e.g. HyperTerminal.
- The communication parameters baud rate and parity must be set in the terminal program and on the scale to the same values, see Section 4.6.3.

5.1.3 Notes on network operation via the optional interface RS422/485

Up to 32 scales can be networked with the optional RS422/485 interface. In network operation, the scales must be addressed from the computer before commands can be sent and weighing results received.

Description of the steps	Host	Direction	Scale
1. Host addresses the scale, e.g. with the address 3A hex.	<ESC> 3A	——>	
2. Host sends a SICS command, e.g. SI	SI <CRLF>	——>	
3. The scale confirms receipt of the command and sends the address back		<——	<ESC> 3A
4. The scale responds to the command and returns control of the bus to the host		<——	S_S____45.02_kg <CRLF>

5.2 TOLEDO Continuous mode

5.2.1 TOLEDO Continuous commands

The scale supports the following input commands in TOLEDO Continuous mode:

Command	Meaning
P <CR><LF>	Print out the current result
T <CR><LF>	Tare the scale
Z <CR><LF>	Zero the display
C <CR><LF>	Clear the current value
Tx.xxx <CR><LF>	Define tare

5.2.2 Output format in TOLEDO Continuous mode

Weight values are always sent in the following format in TOLEDO Continuous mode:

	Status			**Field 1**						**Field 2**							
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
STX	SWA	SWB	SWC	MSD	–	–	–	–	LSD	MSD	–	–	–	–	LSD	CR	CHK

Field 1	6 digits for the weight value that is sent without a decimal point and unit
Field 2	6 digits for the tare weight that is sent without a decimal point and unit
STX	ASCII characters 02 hex, characters for "start of text"
SWA, SWB, SWC	Status words A, B, C, see below
MSD	Most significant digit
LSD	Least significant digit
CR	Carriage Return, ASCII characters 0D hex
CHK	Checksum (2-part complement of the binary sum of the 7 lower bits of all previously sent characters, incl. STX and CR)

Status word A								
		Status Bit						
Function	**Selection**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Decimal position	X00	0	1			0	0	0
	X0					0	0	1
	X					0	1	0
	0.X					0	1	1
	0.0X					1	0	0
	0.00X					1	0	1
	0.000X					1	1	0
	0.0000X					1	1	1
Numerical increment	X1			0	1			
	X2			1	0			
	X5			1	1			

Status word B	
Function / value	**Bit**
Gross / net: Net = 1	0
Sign: Negative = 1	1
Overload = 1	2
Movement = 1	3
lb/kg: kg = 1	4
1	5
Powerup = 1	6

Status word C	
Function / value	**Bit**
0	0
0	1
0	2
Print request = 1	3
Extended = 1	4
1	5
Manual taring, only kg = 1	6

6 Event and error messages

Error	**Cause**	**Remedy**
Display Dark	• Back lighting set too dark • No mains voltage • Unit switched off • Mains cable not plugged in • Brief fault	➜ Set back lighting (`b.LIGHt`) brighter ➜ Check mains ➜ Switch on unit ➜ Plug in mains plug ➜ Switch device off and back on again
Insufficient load L _ _ _ _ _ ⅃	• Load plate not on the scale • Weighing range not reached	➜ Place load plate on the scale ➜ Set to zero
Overload r ‾ ‾ ‾ ‾ ‾ 7	• Weighing range exceeded	➜ Unload scale ➜ Reduce preload
- - - - - -	• Result not yet stable	➜ If necessary adjust vibration adapter or weigh dynamically
- - n o - -	• Function not permissible	➜ Unload scale and set to zero
r ‾ n o ‾ 7 L _ n o _ ⅃	• Zeroing not possible with over-load or insufficient load	➜ Unload scale
Err 4	• Average piece weight too low	➜ Select and place larger number of reference parts on the scale
Err 5	• No valid value from the reference scale	➜ Check cable connection between the units ➜ Check interface settings
Err 6	• No calibration	➜ Unplug the mains plug then plug it back in; switch unit off and then back on in battery mode ➜ Calibrate scale ➜ Contact your dealer or local rep-resentative
Err 7	• Average piece weight too low	➜ Counting is not possible on this scale with this average piece weight

Error	Cause	Remedy
Err 9	• Unstable weight value when referencing	➜ Ensure stable surroundings ➜ Ensure that the weighing pan is freely movable ➜ Adjust vibration adapter
Err 14	• Impermissible target value or impermissible tolerance	➜ Repeat input with permissible values
Err 15	• Setting the average piece weight impermissible during weight accumulating	➜ End weight accumulating ➜ Reset average piece weight
Err 16	• Switching the weighing unit impermissible during weight accumulating	➜ End weight accumulating ➜ Switch weighing unit
Err 17	• Printout not yet ended	➜ End printout ➜ Repeat required action
Err 18	• Switching the weighing unit impermissible during dynamic weighing	➜ End dynamic weighing ➜ Switch weighing unit
Err 53	• EAROM checksum error	➜ Unplug the mains plug then plug it back in; switch unit off and then back on in battery mode ➜ Contact your dealer or local representative
Weight display unstable	• Restless installation location • Draft • Restless weighing sample • Contact between weighing pan and/or weighing sample and surroundings • Mains fault	➜ Adjust vibration adapter ➜ Avoid drafts ➜ Dynamic weighing ➜ Remedy contact ➜ Check mains
Incorrect weight display	• Incorrect zeroing • Incorrect tare value • Contact between weighing pan and/or weighing sample and surroundings • Scale tilted	➜ Unload scale, set to zero and repeat weighing operation ➜ Clear tare ➜ Remedy contact ➜ Level scale

7 Technical data and accessories

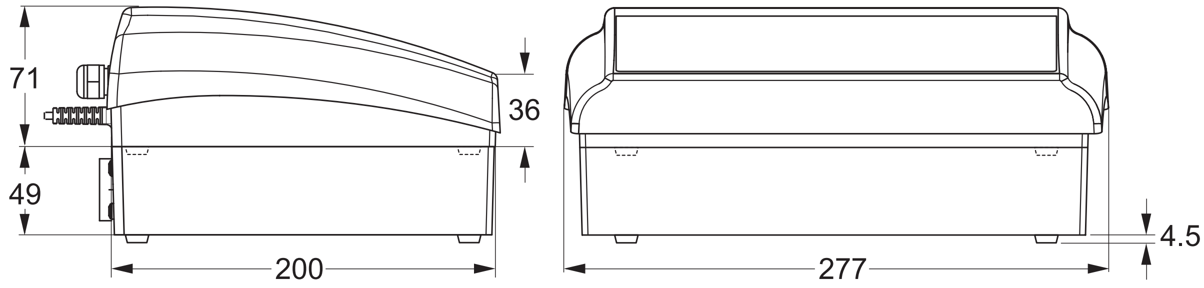
7.1 Technical data

7.1.1 General data

ITT	
Applications	• Weighing • Dynamic weighing • Counting with fixed or variable reference quantity • Counting with reference and bulk scale • Accumulating • Numerical definition of tare weights, average piece weights and reference quan-tities • 100 memory locations for tare weights, average piece weights, target weights and target quantities • Checkweighing and weighing-in to target weight/target quantity
Settings	• Resolution selectable • Weighing unit selectable: g, kg, oz, lb, t • Taring function: manual, automatic, chain tare • Automatic zero point correction when the scale is switched on and during oper-ation • Filter for adapting to the ambient conditions (vibration adapter) • Filter for adapting to the weighing type, e.g. dispensing (weighing process adapter) • Switch-off function, sleep mode for mains-operated devices, energy-saving mode for battery operation • Display lighting • Add mode for determining the piece weight when counting • Reference optimization • Programmable memories and identifications • Date and time • Signal tone • Graphic display of the weighing range
Display	• LCD (liquid crystal display), digits 16 mm high, with back lighting

ITT	
Keypad	• Pressure point membrane keypad • Scratch-proof labeling
Housing	• Diecast aluminum housing • Dimensions, see Page 57
Protection Class (IEC 529, DIN 40050, EN60529)	• IP65 (not with Ethernet interface)

7.1.2 Dimensions



Dimensions in mm

7.1.3 Net weights

	without battery	with OptionPac (incl. battery)
ITT	2.4 kg	4.4 kg

7.1.4 Interface connections

The compact scale can be fitted with a maximum of 2 interfaces. The following combinations are possible:

COM1	COM2
RS232	–
RS232	RS232
RS232	Ethernet
RS232	Digital I/O
RS232	Analog second scale interface

7.1.5 Assignment of the interface connections

Pin	**RS232 (COM1/ COM2)**	**Digital I/O (COM2)**	**Analog Interface**
1	–	GND	+ Excitation (+8.2 VDC)
2	TxD1/2	OUT0	+ Sense
3	RxD1/2	OUT1	Shield
4	–	OUT2	– Sense
5	GND	OUT3	– Excitation (GND)
6	–	IN0	–
7	–	IN1	+ Signal
8	–	IN2	– Signal
9	VCC	IN3	–

8 Appendix

8.1 Table of Geo Values

For weighing instruments verified at the manufacturer's, the geo value indicates the country or geographical zone for which the instrument is verified. The geo value set in the instrument (e.g."Geo 18") appears briefly after switch-on or is specified on a label.

Table **GEO VALUES 3000e** shows the geo values for European countries.

Table **GEO VALUES 6000e/7500e** shows the geo values for different gravitation zones.

8.1.1 GEO VALUES 3000e, OIML Class III (European Countries)

Geographical latitude	Geo value	Country
46°22' – 49°01'	18	Austria
49°30' – 51°30'	21	Belgium
41°41' – 44°13'	16	Bulgaria
42°24' – 46°32'	18	Croatia
48°34' – 51°03'	20	Czechia
54°34' – 57°45'	23	Denmark
57°30' – 59°40'	24	Estonia
59°48' – 64°00' 64°00' – 70°05'	25* 26	Finland
41°20' – 45°00' 45°00' – 51°00'	17 19*	France
47°00' – 55°00'	20	Germany
34°48' – 41°45'	15	Greece
45°45' – 48°35'	19	Hungary
63°17' – 67°09'	26	Iceland
51°05' – 55°05'	22	Ireland
35°47' – 47°05'	17	Italy
55°30' – 58°04'	23	Latvia
47°03' – 47°14'	18	Liechtenstein
53°54' – 56°24'	22	Lithuiania
49°27' – 50°11'	20	Luxemburg
50°46' – 53°32'	21	Netherlands
57°57' – 64°00' 64°00' – 71°11'	24* 26	Norway

Geographical latitude	Geo value	Country
49°00' – 54°30'	21	Poland
36°58' – 42°10'	15	Portugal
43°37' – 48°15'	18	Romania
47°44' – 49°46'	19	Slovakia
45°26' – 46°35'	18	Slovenia
36°00' – 43°47'	15	Spain
55°20' – 62°00' 62°00' – 69°04'	24* 26	Sweden
45°49' – 47°49'	18	Switzerland
35°51' – 42°06'	16	Turkey
49°00' – 55°00' 55°00' – 62°00'	21* 23	United Kingdom

* factory setting

8.1.2 GEO VALUES 6000e/7500e OIML Class III (Height £1000 m)

Geograhical latitude	Geo value
00°00' – 12°44'	5
05°46' – 17°10'	6
12°44' – 20°45'	7
17°10' – 23°54'	8
20°45' – 26°45'	9
23°54' – 29°25'	10
26°45' – 31°56'	11
29°25' – 34°21'	12
31°56' – 36°41'	13
34°21' – 38°58'	14
36°41' – 41°12'	15
38°58' – 43°26'	16
41°12' – 45°38'	17
43°26' – 47°51'	18
45°38' – 50°06'	19
47°51' – 52°22'	20
50°06' – 54°41'	21
52°22' – 57°04'	22
54°41' – 59°32'	23
57°04' – 62°09'	24
59°32' – 64°55'	25
62°09' – 67°57'	26
64°55' – 71°21'	27
67°57' – 75°24'	28
71°21' – 80°56'	29
75°24' – 90°00'	30

8.2 Sample protocols

Weighing with tare

```
G          0.1085 kg
T          0.0145 kg
N          0.0940 kg
```

G = Gross weight

N = Net weight

T = Tare

Dyn WT = dynamically determined weight

Dynamic weighing

```
Dyn WT     43.52 kg
T           3.78 kg
```

Printout with header

KERN & Sohn GmbH
www.kern-sohn.com

G	**0.1085 kg**
T	**0.0145 kg**
N	**0.0940 kg**

Protocol of the scale settings (menu point `List`, see page 47)

```
SOFTWARE VER 5-2-1.04

SCALE
-------------
METROLO     :NO APPr
SNR         :0000000
Scale Build
 SCAL.TYP  :2MULT.RN
 BAS.UNIT  :g
 SCL.CAP1  :6000 g
 RESOL.1   :2 g
 SCL.CAP2  :15000 g
 RESOL.2   :5 g
GEO         :19
DISPLAY
 UNIt1      :g
 UNIt2      :t
 RESOLU     :2 g
 UNt.rOLL   :OFF
tArE
 A-TArE     :OFF
 CHAIn.tr   :ON
 A.CL-tr    :OFF
 PB.TArE    :ON
ZERO
 Z-CAPT     :-2 18
 AZM        :0.5 d
RESTART     :OFF
FILTER
 VIBRAT     :MED
 PROCESS    :UNIVEr
 StABILI    :StAnDrD
Min.WEiG
 SEt.VAL    :150.000 g
 ONOFF:OFF
```

```
APPLICATION
-------------
COUNT
 VAr-SPL     :ON
 Min.RefW    :99
 REF OPT     :OFF
 A-SMPL      :OFF
 A.CL-APW    :OFF
 ACCurCy     :ON
 tOtAL.Ct    :BULK
ACCUMULATION
 COM 1
  LOT.PRNT   :StdArd
  FIN.PRNT   :StdArd
  SUMMARY    :OFF
 COM 2
  LOT.PRNT   :StdArd
  FIN.PRNT   :StdArd
  SUMMARY    :OFF
 REACH Z     :ON
CHECKWEIGHING
 BEEPER      :ON
 SP.TOL -    :0 %
 SEND.MOD    :CONTINU
MEMORY       :10-10-50
INFO.KEY
  INFO.KEY1 :tArE
  INFO.KEY2 :GROSS
  INFO.KEY3 :APW
  INFO.KEY4 :HIGHRES
  INFO.KEY5 :ACCURCY
DYNAMIC      :OFF
```

```
TERMINAL
-------------
DEVICE
 SLEEP       :OFF
 B.LIGHt     :ON
DAtE.tim
 DAtE.FOr    :EU
 DAtE        :18.04.2004
 timE        :21:10:52
 BEEP        :OFF

COMMUNICATION
-------------
COM 1
 MODE        1:Print
 PriNtEr
  tEmPLat    1:StdArd
  ASCi.Fmt
   LINE.FMT 1:MULTI
   LENGtH    1:24
   ADD LF    1:0
 PARAMET
  BAUD       1:2400
  PAriTY     1:7 EVEn
  H.SHAKE    1:XONXOFF
  ChECSUM    1:OFF
  Vcc        1:OFF
COM 2
 MODE        2:DIALOG
 PARAMET
  BAUD       2:9600
  PAriTY     2:8 nonE
  H.SHAKE    2:XONXOFF
  ChECSUM    2:OFF
  Vcc        2:OFF
OPTION
 EtH.Net     :N.A.
 USB         :N.A.
 ANALOG      :N.A.
 DiGitAL     :N.A.
DEF.PrN
 tEmPLt1
 tEmPLt2
```

KERN & Sohn GmbH
D-72322 Balingen-Frommern
Postfach 4052
E-Mail: info@kern-sohn.de
Tel: 0049-[0]7433- 9933-0
Fax: 0049-[0]7433-9933-149
Internet: www.kern-sohn.de

Konformitätserklärung

EC-Konformitätserklärung	**EC-Declaration of -Conformity**
EC- Déclaration de conformité	**EC-Declaración de Conformidad**
EC-Dichiarazione di conformità	**EC-Conformiteitverklaring**
EC- Declaração de conformidade	**EC- Prohlášení o shode**
EC-Deklaracja zgodności	**EC-Заявление о соответствии**

D	Konformitäts-erklärung	Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
GB	Declaration of conformity	We hereby declare that the product to which this declaration refers conforms with the following standards.
CZ	Prohlášení o shode	Tímto prohlašujeme, že výrobek, kterého se toto prohlášení týká, je v souladu s níže uvedenými normami.
E	Declaración de conformidad	Manifestamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes.
F	Déclaration de conformité	Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
I	Dichiarazione di conformitá	Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.
NL	Conformiteit-verklaring	Wij verklaren hiermede dat het product, waarop deze verklaring betrekking heeft, met de hierna vermelde normen overeenstemt.
P	Declaração de conformidade	Declaramos por meio da presente que o produto no qual se refere esta declaração, corresponde às normas seguintes.
PL	Deklaracja zgodności	Niniejszym oświadczamy, że produkt, którego niniejsze oświadczenie dotyczy, jest zgodny z poniższymi normami.
RUS	Заявление о соответствии	Мы заявляем, что продукт, к которому относится данная декларация, соответствует перечисленным ниже нормам.

Scale Series: BTBP/BTSP/BTTP/ITB/ITS/ITT
Plattform line: TP
Terminals: KMB-TM, KMS-TM, KMT-TM

Mark applied	EU Directive	Standards	Approval/ Test-certificate N°
CE	73/23/EEC 93/68/EEC Low Voltage	EN61010-1	
CE	89/336/EEC 93/68/EEC 92/31/EEC EMC	EN61326-1 EN61000-3-2 EN61000-6-1 0,5µV/e (3V/m) EN61000-6-2 1,3µV/e (10V/m)	
CE year 0103 M	90/384/EEC 93/68/EEC Non automatic weighing Instruments 1), 2), 3)	EN45501 1), 2), 3)	T6189 1), 2) TC7089 1), 2)

Scale Series: BTEP

Mark applied	EU Directive	Standards	Approval/ Test-certificate N°
CE	73/23/EEC 93/68/EEC Low Voltage	EN60950-1	
CE	89/336/EEC 93/68/EEC 92/31/EEC EMC	EN61326-1 Kl.B EN61000-3-2 EN61000-3-3	
CE year 0103 M	90/384/EEC 93/68/EEC Non automatic weighing instruments 1)	EN45501 1)	T7092 1) TC7091 1)

1) gilt nur für geeichte Waagen
valable uniquement pour les balances vérifiées
la dichiarazione vale solo per le bilance omologate
vale só para balanças com aferição
dotyczy tylko wag legalizowanych
applies only to certified balances
sólo aplicable a balanzas verficadas
Geldt uitsluitend voor geijkte weegschalen
platí jen pro cejchované váhy
действует только для поверенных весов

2) nur gültig für KMB-TM/KMS-TM/KMT-TM Terminals in Verbindung mit zugelassenen Lastzellen
valable uniquement pour les terminaux KMB-TM/KMS-TM/KMT-TM en liaison avec des cellules de charge homologuées
valido solo per terminali KMB-TM/KMS-TM/KMT-TM in collegamento con celle di carico approvate
só válido para os terminais KMB-TM/KMS-TM/KMT-TM em união com as células de carga admissíveis
ważny tylko dla terminali KMB-TM/KMS-TM/KMT-TM w połączeniu z dopuszczalnymi ogniwami obciążnikowymi
valid only for KMB-TM/KMS-TM/KMT-TM terminals in connection with approved load cells
sólo válido para terminales KMB-TM/KMS-TM/KMT-TM en combinación con células de carga aprobadas
uitsluitend geldig voor KMB-TM/KMS-TM/KMT-TM terminals in verbinding met toegestane drukdozen
platí pouze pro terminály KMB-TM/KMS-TM/KMT-TM ve spojitosti s přípustnými zátěžovými buňkami.
действительно только для терминалов KMB-TM/KMS-TM/KMT-TM, связанных с допущенными грузовыми ячейками

3) nur gültig für TP Wägebrücken in Verbindung mit einem zugelassenen Waagenterminal
valable uniquement pour les plates-formes TP en liaison avec un terminal de pesée homologué
valido solo per basamenti TP in collegamento con un terminale di pesata approvato
valid only for TP weighing platforms in connection with an approved weighing indicator
sólo válido para plataformas de pesaje TP en combinatión con un terminal de balanza aprobado

<table>
<tr><td>English</td><td>Important notice for verified weighing instruments</td></tr>
<tr><td>M</td><td>Weighing instruments verified at the place of manufacture bear the preceding mark on the packing label and a green M-sticker on the descriptive plate. They may be set to work immediately.</td></tr>
<tr><td>~~M~~</td><td>Weighing instruments which are verified in two steps has no green "M" on the descriptive plate, bear the aforementioned identification on the packing label. The second step of the verification must be carried out by the W&M authorities</td></tr>
<tr><td colspan="2">The first step of the verification has been carried out in the manufacturing company. It comprises all tests according EN45501-8.2.2. In regards to scales with analogue connection to the weighing-platform, a weighing test according to EN45501-3.5.3.3 must be carried out additionally. This test is not necessary if the terminal bears the serial-number of the weighing-platform.</td></tr>
<tr><td>Deutsch</td><td>Wichtiger Vermerk für geeichte Waagen in EU-Ländern</td></tr>
<tr><td>M</td><td>Werksgeeichte Waagen tragen vorstehendes Kennzeichen auf dem Packetikett und eine grünen M-Kleber. auf dem Eichschild. Sie dürfen sofort in Betrieb genommen werden.</td></tr>
<tr><td>~~M~~</td><td>Waagen die in zwei Schritten geeicht werden und kein grünes "M" auf dem Eichschild haben, tragen vorstehendes Kennzeichen auf dem Packetikett.
Der zweite Schritt der Eichung ist durch den Eichbeamten durchzuführen.</td></tr>
<tr><td colspan="2">Der erste Schritt der Eichung wurde im Herstellerwerk durchgeführt. Er umfaßt alle Prüfungen gemäß EN45501-8.2.2. Bei Waagen mit analogen Wägebrückenanschluss muß zusätzlich die Richtigkeit gemäß EN45501-3.5.3.3 geprüft werden.
Diese Prüfung ist nicht notwendig, wenn das Terminal die Serien-Nr. der Wägebrücke trägt.</td></tr>
<tr><td>Français</td><td>Remarque Importante pour les Instruments de pesage vérifiées dans les pays membre de l'Union Européenne</td></tr>
<tr><td>M</td><td>Les instruments de pesage vérifiés en usine sont identifiés par un M sur leur emballage et par un sticker M vert sur la plaque d'identification.
Ils peuvent être utilisés après leur installation.</td></tr>
<tr><td>~~M~~</td><td>Les instruments de pesage vérifiés en deux étapes portent l'identification M barré sur leur emballage. La seconde étape de la vérification doit être effectuée par l'assistant technique de l'administration des poids et mesures.</td></tr>
<tr><td colspan="2">La première étape de la vérification a été effectuée en usine. Cela comprend tous les essais suivant la norme EN45501-8.2.2. Pour les instruments de pesage avec une connexion analogique à la plate-forme de pesage, un essai de pesage suivant la norme EN45501-3.5.3.3 droit être effectué en plus. Cela n'est pas nécessaire si le terminal porte le numéro de la plate-forme de pesage.</td></tr>
<tr><td>Español</td><td>Nota importante para balanzas verificadas en paises de la UE</td></tr>
<tr><td>M</td><td>Las balanzas verificadas en origen llevan esta indicación en la etiqueta del embalaje y con la etiqueta M sobre fondo verde en la placa de caracteristicas pueden ser utilizadas inmediatamente.</td></tr>
<tr><td>~~M~~</td><td>Balanzas cuya verificación se realiza en dos fases llevan esta indicación en la etiqueta del embalaje. La segunda fase de la verificación debe ser realizada por el asistente técnico de la oficina de contraste.</td></tr>
<tr><td colspan="2">La primera fase de la verificatión ha sido realizada en origen. Incluye todos los ensayos según la norma EN45501-8.2.2. Para las básculas con plataforma de pesaje con salida analogica debe realizarse además el ensayo según EN45501-3.5.3.3.
Este ensayo no es necesario si el terminal lleva el número de la plataforma de pesaje.</td></tr>
<tr><td>Italiano</td><td>Nota Importante per le bilance approvate nei paesi UE</td></tr>
<tr><td>M</td><td>Le bilance verificate in fabbrica portano questo contrassegno sull'etichetta dell'imballo e con il sigillo M su sfondo verde sulla targhetta metrologica possono essere messe in uso immediatamente.</td></tr>
<tr><td>~~M~~</td><td>Le bilance che vengono verificate in due fasi, portano questo contrassegno sull'etichetta dell'imballo. La seconda fase della verifica deve essere eseguita dal servizio assistenza tecnica dell'ufficio di pesi e misure.</td></tr>
<tr><td colspan="2">La prima fase della verifica è stata eseguita dal produttore e comprende tutte le prove previste dalla norma di riferimento EN45501-8.22. Riguardo le bilance con connessione analogica a piattaforma di pesata, una ulteriore prova deve essere eseguita in accordo alla norma EN45501-3.5.3.3. Questa prova non è necessaria se il terminale porta il numero di serie della piattaforma.</td></tr>
</table>

Netherlands	**Belangrijke aanmerking voor geijkte weegschalen in EG-landen**
M	In de fabriek geijkte weegschalen dragen dit kenteken op het emballage-etiket en een groene M-sticker op het ijklabel. Deze kunnen meteen in gebruik genomen worden.
~~M~~	Bij weegschalen die in twee stappen geijkt moeten worden en geen groene "M" op het ijklabel hebben, staat dit kenteken op het emballage-etiket. De tweede stap van de ijking moet door het ijkwezen uitgevoerd worden.
De eerste stap van de ijking werd in de fabriek uitgevoerd. Deze stap omvat alle tests overeenkomstig EN45501-8.2.2. Bij weegschalen met een analoge weegbruggenaansluiting moet aanvullend de nauwkeurigheid overeenkomstig EN45501-3.5.3.3 getest worden. Deze controle is niet nodig als de terminal het serienummer van de weegbrug heeft.	
Português	**Nota importante para as balanças aferidas em países EU**
M	As balanças aferidas pela fábrica levam o cartaz identificador sobre a etiqueta de pacote e um adhesivo M verde sobre a placa de aferição. Têm que colocar-se em funcionamento sem demora.
~~M~~	As balanças que foram aferidas em dois passos e que não tenham um "M" verde sobre a placa de aferição, têm o rótulo antecedente na etiqueta de pacote. O segundo passo da aferição tem que ser feito por um empregado público de aferição.
A primeira fase da aferição foi feita na fábrica do produtor. Abarca todas as homologações segundo EN45501-8.2.2. Nas balanças com uma conexão analógica da ponte de pesagem, há que controlar também a exactidão segundo EN45501-3.5.3.3. Esta inspecção não é necessária se o terminal leva o número de série da ponte de pesagem.	
Česky	**Důležitý pokyn pro cejchované váhy v zemích EU**
M	Váhy ocejchované ve výrobním závodě jsou opatřeny výše uvedenou značkou na etiketě balení a zelenou nálepkou M na cejchovacím štítku. Takže se mohou okamžitě uvést do provozu.
~~M~~	Váhy se cejchují ve dvou etapách, a jestliže nemají zelené M na cejchovacím štítku, mají na etiketě balení výše uvedenou značku. Druhou etapu cejchování provádí cejchovní úřad.
První fáze cejchování byla provedena ve výrobním závodě. Zahrnuje všechny testy podle EN45501-8.2.2. V případě vah s analogovým připojením vážního můstku se musí navíc zkontrolovat správnost podle EN45501-3.5.3.3. Tato kontrola není potřebná, jestliže je na terminálu výrobní číslo vážního můstku.	
Polski	**Adnotacje dotyczące legalizowanych wag w państwach UE**
M	Legalizowane u producenta wagi mają wystające oznaczenie na opakowaniu i zieloną nalepkę M na znaku legalizacji. Takie wagi można natychmiast eksploatować.
~~M~~	Wagi, które są legalizowane w dwóch etapach i nie mają zielonego „M" na znaku legalizacji, mają wystające oznaczenie na etykiecie opakowania. Drugi etap legalizowania musi przeprowadzić pracownik urzędu miar i wag.
Pierwszy etap legalizowania przeprowadzono w zakładzie producenta. Obejmuje wszystkie kontrole według EN45501-8.2.2. W przypadku wag z analogowym złączem pomostu wagi należy dodatkowo skontrolować poprawność zgodnie z EN45501-3.5.3.3. Taka kontrola nie jest konieczna, gdy terminal posiada numer seryjny pomostu wagi.	
Русски	**Примечание для поверенных весов в странах ЕЭС**
M	Поверенные на заводе весы помечаются вышеуказанным символом на упаковочной этикетке и зеленой наклейкой "M" на табличке поверки. Они могут немедленно приниматься в эксплуатацию.
~~M~~	Весы, которые поверяются в два этапа и не имеют зеленой наклейки "M" на табличке поверки, помечаются вышеуказанным символом на упаковочной этикетке. Второй этап поверки должен производиться поверочным ведомством.
Первый шаг поверки был выполнен на заводе-изготовителе. Он включает все проверки согласно EN45501-8.2.2. У весов с аналоговым подключением грузоприемного устройства необходимо дополнительно проверить правильность согласно EN45501-3.5.3.3. Эта проверка не нужна, если терминал имеет серийный номер грузоприемного устройства.	



Date: 27.02.2007 **Signature:**

Gottl. KERN & Sohn GmbH
Management

Notice
Certified balances and balances used for legal applications have the EU type approval. The year of the initial verification is shown next to the CE mark. Such balances are verified in the factory and carry the „M“ mark on the actual balance and the packaging. The year of initial verification is shown next to the CE mark. The GEO value of verified balances explains for which location of use the balance has been verified. This GEO value is shown on the balance itself and on the packing. Further details see GEO value table.

Hinweise
Für geeichte/eichpflichtige Waagen liegt eine EU Bauartzulassung vor. Das Jahr der ersten Eichung ist neben dem CE Zeichen aufgeführt. Solche Waagen sind ab Werk geeicht und tragen die Kennzeichnung „M“ auf dem Gerät selbst und auf der Verpackung. Der GEO-Wert gibt bei vom Hersteller geeichten Waagen an, für welchen Aufstellungsort die Waage geeicht ist. Dieser GEO-Wert befindet sich auf der Waage sowie der Verpackung. Genaueres ist der GEO-Wert-Tabelle zu entnehmen.

Remarques
Les balances vérifiées/admissibles à la vérification font l’objet d’une approbation de modèle UE. L’année de la vérification primitive est indiqués à côté de la marque CE. Ces balances sont vérifiées d’origine et portent la marque „M“ sur l’appareil lui-même et sur l’emballage. Le valeur GEO indique le lieu d’utilisation pour lequel la balance été vérifiée. Ce valeur GEO se trouve sur la balance ainsi que sur l’emballage. Veuillez trouver plus de détails dans le tableau GEO.

Notas
Las balanzas verificadas/verificables cuentan con una aprobación de modelo UE. El año de la primera verificación está indicado al lado del distintivo CE. Estas balanzas son verificadas en fábrica y llevan la designación „M“ sobre el propio aparato y sobre el embalaje. El valor GEO indica el lugar de ubicación por lo cual la balanza está verificado. El valor se encuentra sobre la balanza así como sobre el embalaje. Por favor tomen demás detalles de la tabla GEO.

Avvertenza
Per le bilance approvate esiste un’approvazione CE del tipo. L´anno della prima verifica è indicato a fianco della marcatura CE. I tipi marcati con un contrassegno „M“ su sfondo verde possono essere impiegati da subito. Il coefficiente GEO di bilance omologate indica per quale luogo la bilancia è stata omologata. Questo coefficiente GEO si trova sulla bilancia e sull’imballo. Ulteriori informazioni vedi tabella coefficiente GEO

Opmerkingen
Voor geijkte weegschalen/weegschalen, die verplicht geijkt moeten worden, ligt er een EG-modelgoedkeuring ter inzage. Het jaar van de eerste ijking werd naast het EG-conformiteitsteken vermeld. Dergelijke weegschalen werden in de fabriek geijkt en dragen het identificatielabel „M“ op het apparaat zelf en op de verpakking. De GEO-waarde geeft bij door de fabrikant geijkte weegschalen aan, voor welke plaats van opstelling de weegschaal geijkt is. Deze GEO-waarde bevindt zich op de weegschaal en ook op de verpakking. Meer details kan er uit de tabel met de GEO-waarde afgeleid worden.

Instruções
Para as balanças aferidas / obrigadas à aferição existe uma homologação de tipo construtivo da EU. O ano da primeira aferição fica ao lado do simbolo CE. Tais balanças foram aferidas na fábrica e levam o rótulo „M“ no mesmo aparelho e na embalagem. O valor GEO indica nas balanças aferidas pelo produtor para qual lugar de colocação a balança foi aferida. Este valor GEO encontra-se na balança assim como na embalagem. Mais pormenores podem ver-se na tablela dos valores GEO.

Poznámky
Pro ocejchované a cejchování podléhající váhy existuje povolení EU podle typu konstrukce. Rok prvního cejchování se uvádí vedle značky CE. Takové váhy se cejchují ve výrobním závodě, a jsou označeny znakem „M“ na vlastním přístroji, i na obalu. Hodnota GEO udává u výrobcem cejchovaných vah, pro jaké místo instalace je váha ocejchována. Tato hodnota GEO se nachází na váze, jakož i na obalu. Přesnější je odečíst hodnotu GEO z tabulky.

Wskazówki
Dla wag legalizowanych/podlegających obowiązkowi legalizowania istnieje dokument dopuszczenia rodzaju konstrukcji UE. Rok pierwszej legalizacji jest podany obok znaku CE. Takie wagi są legalizowane w zakładzie producenta i mają oznaczenie „M“ na sobie i na opakowaniu. W przypadku wag legalizowanych u producenta wartość geograficzna podaje, dla jakich miejsc ustawienia waga została legalizowana. Ta wartość geograficzna znajduje się zarówno na wadze jak i na opakowaniu. Dokładne informacje znajdują się w tabeli wartości geograficznych.

Указания
Калиброванные/подлежащие поверке весы получают допуск на конструкцию ЕС. Год первой поверки приведен рядом с символом CE. Такие весы поверены на заводе и имеют маркировку „M“ на самом устройстве и на упаковке. Значение GEO на откалиброванных изготовителем весах указывает, для какого места установки произведена калибровка весов. Это значение GEO находится на весах и на упаковке. Более подробная информация содержится в таблице значений GEO

GEO-WERT-Tabelle / GEO-value table

geographische Breite /geo-graphical latitude					Höhe über Meer in Metern / altitude				
					0-650	650-1300	1300-1950	1950-2600	2600-3250
0°	0‘	-	9°	52‘	4 / 5	3 / 4	2 / 3	1 / 2	0 / 1
9°	52‘	-	15°	6‘	5 / 6	4 / 5	3 / 4	2 / 3	1 / 2
15°	6‘	-	19°	2‘	6 / 7	5 / 6	4/ 5	3 / 4	2 / 3
19°	2‘	-	22°	22‘	7 / 8	6 / 7	5 / 6	4 / 5	3 / 4
22°	22‘	-	25°	21‘	8 / 9	7 / 8	6 / 7	5 / 6	4 / 5
25°	21‘	-	28°	6‘	9 / 10	8 / 9	7 / 8	6 / 7	5 / 6
28°	6‘	-	30°	41‘	10 / 11	9 / 10	8 / 9	7 / 8	6 / 7
30°	41‘	-	33°	9‘	11 / 12	10 / 11	9 / 10	8 / 9	7 / 8
33°	9‘	-	35°	31‘	12 / 13	11 / 12	10 / 11	9 / 10	8 / 9
35°	31‘	-	37°	50‘	13 / 14	12 / 13	11 / 12	10 / 11	9 / 10
37°	50‘	-	40°	5‘	14 / 15	13 / 14	12 / 13	11 / 12	10 / 11
40°	5‘	-	42°	19‘	15 / 16	14 / 15	13 / 14	12 / 13	11 / 12
42°	19‘	-	44°	32‘	16 / 17	15 / 16	14 / 15	13 / 14	12 / 13
44°	32‘	-	46°	45‘	17 / 18	16 / 17	15 / 16	14 / 15	13 / 14
46°	45‘	-	48°	58‘	18 / 19	17 / 18	16 / 17	15 / 16	14 / 15
48°	58‘	-	51°	13‘	19 / 20	18 / 19	17 / 18	16 / 17	15 / 16
51°	13‘	-	53°	31‘	20 / 21	19 / 20	18 / 19	17 / 18	16 / 17
53°	31‘	-	55°	52‘	21 / 22	20 / 21	19 / 20	18 / 19	17 / 18
55°	52‘	-	58°	17‘	22 / 23	21 / 22	20 / 21	19 / 20	18 / 19
58°	17‘	-	60°	49‘	23 / 24	22 / 23	21 / 22	20 / 21	19 / 20
60°	49‘	-	63°	30‘	24 / 25	23 / 24	22 / 23	21 / 22	20 / 21
63°	30‘	-	66°	24‘	25 / 26	24 / 25	23 / 24	22 / 23	21 / 22
66°	24‘	-	69°	35‘	26 / 27	25 / 26	24 / 25	23 / 24	22 / 23
69°	35‘	-	73°	16‘	27 / 28	26 / 27	25 / 26	24 / 25	23 / 24
73°	16‘	-	77°	52‘	28 / 29	27 / 28	26 / 27	25 / 26	24 / 25
77°	52‘	-	85°	45‘	29 / 30	28 / 29	27 / 28	26 / 27	25 / 26